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| EXAMINER | |
| SCHUBERT, KEVIN R | |
| ART UNIT | PAPER NUMBER |
| 2137 | |

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/967,051

Applicant(s)

PARRY, TRAVIS J.

Examiner

Kevin Schubert

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claims 1-21 have been considered.

Claim Rejections - 35 USC § 102

5 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

10 (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

15 Claims 1-5 and 8-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Itakura, U.S. Patent Application Publication No. 2002/0129251.

20 As per claim 1, the applicant describes a method comprising the following limitations which are met by Itakura:

- a) encoding a public key in one or more ink strands ([0112]);
 - b) embedding the one or more ink strands in a printing material ([0108]);
 - c) wherein the public key is uniquely associated with an electronic signature that is unique to a
- 25 user ([0055], 51b of Fig 2);

Itakura discloses encoding a public key and a secret key into an authentication mark (13 of Fig 1) through ink with dissolved DNA, which is the printing material. The public key and secret key are used in digitally signing documents [0055] to create a “seal of blood” scheme in which biological, or DNA, data from an individual user is used to create his unique public key, secret key, and digital signature [0139].

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As per claims 2, the applicant describes the method of claim 1, which is met by Itakura, with the following limitation which is also met by Itakura:

Further comprising deriving the public key from information associated with the user ([0108]).

5 As per claim 3, the applicant describes the method of claim 1, which is met by Itakura, with the following limitation which is also met by Itakura:

Wherein the printing material further comprises ink ([0108]).

10 As per claim 4, the applicant describes the method of claim 1, which is met by Itakura, with the following limitations which are also met by Itakura:

- a) assigning a private key to the user ([0109]);
- b) deriving the public key using the private key ([0109]).

15 As per claim 5, the applicant describes the method of claim 1, which is met by Itakura, with the following limitations which are also met by Itakura:

- a) receiving a password from the user (Fig 4);
- b) deriving the public key using the password (Fig 4);

The password is the data authentication mark.

20 As per claim 8, the applicant describes the method of claim 1, which is met by Itakura, with the following limitation which is also met by Itakura:

Further comprising distributing the printing material including the ink strands to the user ([0043]).

25 As per claims 9 and 10, the applicant describes the method of claim 1, which is met by Itakura, with the following limitation which is also met by Itakura:

Wherein the ink strands further comprise deoxyribonucleic acid (DNA) strands that are arranged in such a way as to denote the public key ([0108]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

5 (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itakura in view of Bancroft, U.S. Patent No. 6,312,911.

15 As per claims 6 and 7, the applicant describes the method of claim 1, which is met by Itakura, with the following limitation which is met by Bancroft:

Further comprising placing the printing material including the ink strands into a writing instrument (Bancroft: Col 10, lines 40-48);

Itakura discloses all the limitations of claim 1. However, Itakura does not disclose that the printing material, or ink with dissolved DNA, is placed into a writing instrument.

20

Bancroft discloses that ink with dissolved DNA can be put in a writing instrument. The writing instrument can then sign documents, and the signatures can be verified by evaluating the ink dissolved with DNA.

25 Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Houvener, U.S. Patent No. 6,397,194, in view of Itakura in further view of Bancroft.

As per claim 11, the applicant describes the following system which is met by Houvener in view of Itakura:

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a) receiving an electronic document that has been converted from a paper document having a physical signature (Houvener: Col 5, lines 33-44);

b) detecting one or more ink strands in ink used to create the physical signature (Itakura: [0108], [0112]; Bancroft: Col 10, lines 40-48);

5 c) identifying a public key denoted by one or more of the one or more ink strands (Itakura: [0108], [0112]);

d) locating an electronic signature uniquely associated with the public key (Houvener: Col 8, lines 1-8);

e) attaching the electronic signature to the electronic document to create an electronically signed
10 document (Houvener: Col 8, lines 1-8);

Houvener discloses a system where a document having a physical signature is scanned in and an electronic signature is attached to the electronic document and sent to a remote site. The applicant should note that "locating an electronic signature" is done at the remote site which locates the electronic signature and decrypts it to verify authenticity. Houvener does not disclose the idea of detecting a public
15 key from the ink strands of the physical signature (parts b and c above).

Itakura discloses the idea that ink with dissolved DNA can be used to identify a public key of a user which is then used to authenticate the user. Combining the ideas of Itakura into Houvener's system would mean that a paper document, such as the one in Houvener's system, has the authentication mark of Itakura's system. The ink with dissolved DNA could be identified at the scanning station and, based on
20 whether the user is authenticated, an electronic signature and an electronic document are sent to the remote site.

It would have been obvious to one of ordinary skill in the art at the time the invention was filed to combine the ideas of Itakura with those of Houvener and incorporate the use of Itakura's physical signature, or authentication mark, because doing so adds an extra layer of authentication into the system
25 by authenticating the signatory.

Houvener in view of Itakura do not disclose that the authentication mark is a physical signature. Bancroft discloses a similar authentication system in which ink dissolved with DNA can be used to verify

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authenticity of a handwritten signature. It would have been obvious to one of ordinary skill in the art at the time the invention was filed to combine the ideas of Bancroft with those of Houvener in view of Itakura because doing so allows a handwritten signature to be the authentication mark for verifying documents.

5 As per claims 12 and 13, the applicant describes the system of claim 11, which is met by Houvener in view of Itakura in further view of Bancroft, with the following limitation which is met by Itakura:

 Wherein the identifying a public key further comprises reading a public key from one or more of the one or more ink strands, the public key being stored on each of the one or more ink strands (Itakura: [0112]).

10

 As per claim 14, the applicant describes the system of claim 11, which is met by Houvener in view of Itakura in further view of Bancroft, with the following limitation which is met by Itakura:

 Wherein the identifying a public key further comprises determining the public key from a unique arrangement of deoxyribonucleic acid (DNA) strands that are included in the one or more ink strands (Itakura: [0112]).

15

 Claims 15-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Houvener in view of Itakura in further view of Bancroft in further view of Rice, U.S. Patent Application Publication No. 2002/0049614.

20

 As per claim 15, the applicant describes the method of claim 11, which is met by Houvener in view of Itakura in further view of Bancroft, with the following limitations which are met by Itakura in view of Rice:

25 a) accessing an electronic signature database that contains a plurality of electronic signatures and a plurality of public keys, each electronic signature being uniquely associated with one or the plurality of public keys (Rice: [0008], [0021]; Itakura: [0098]);

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b) finding a public key in the electronic signature database that matches the public key identified by the ink strands (Itakura: [0112]);

c) if the public key identified in the ink strands is found in the electronic signature database, locating the electronic signature that is uniquely associated with the public key found in the electronic signature database (Itakura: [0098]);

Houvener in view of Itakura discloses all the limitations of claim 11. Houvener in view of Itakura also discloses that a memory unit (Itakura: 51d of Fig 4) is used to store public keys obtained from the CA for authentication purposes (Itakura: [0112]). If authentication ensues by finding a public key in the database that matches the public key identified in the ink strands, an electronic signature is generated (Itakura: [0098]). The electronic signature is uniquely associated with a DNA-ID secret key and public key for an individual user based on his DNA. This signature is located when a document with the signature is decrypted. Thus, Houvener in view of Itakura discloses accessing a database (Itakura: 51d) that contains a plurality of public keys and the idea that an electronic signature is uniquely associated with a public key, which is some of part a, and all of parts b and c.

Houvener in view of Itakura, however, fails to disclose that the database that stores the public keys contains a plurality of electronic signatures. Rice discloses a security system in which an electronic signature database contains a plurality of electronic signatures and a plurality of public keys. The database can be accessed in order to find an electronic signature which can then be added to a document.

It would have been obvious to one of ordinary skill in the art at the time the invention was filed to combine the ideas of Rice with those of Houvener in view of Itakura and add the storage of electronic signatures to the public key database in the case where a user wants to append a predefined electronic signature to a document rather than digitally signing a document's contents.

As per claim 16, the applicant describes the method of claim 15, which is met by Houvener in view of Itakura in further view of Bancroft in further view of Rice, with the following limitation which is met by Rice:

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Further comprising retrieving the located electronic signature from the electronic signature database (Rice: [0008]).

As per claim 17, the applicant describes the following method which is met by Houvener in view of Itakura in further view of Bancroft in further view of Rice:

a) identifying a public key from one or more ink strands contained in ink in which the physical signature was created (Itakura: [0112]; Bancroft: Col 10, lines 40-48);

b) locating the public key in an electronic signature database (Itakura: [0112]; Rice: [0008]);

c) identifying an electronic signature in the electronic signature database that is uniquely associated with the public key (Rice: [0008]);

d) substituting the electronic signature in place of the physical signature (Houvener: Col 5, lines 24-41; Col 8, lines 1-8);

The electronic signature is substituted in place of the physical signature because the electronic signature now takes the place of authenticating a document. In Houvener's system, a physical document with a physical signature authenticated it is scanned in. An electronic document with an electronic signature now authenticating the document is created and sent to the remote database.

As per claims 18 and 19, the applicant describes the method of claim 17, which is met by Houvener in view of Itakura in further view of Bancroft in further view of Rice, with the following limitation which is met by Itakura:

Wherein the identifying a public key further comprises decoding a public key from a specific arrangement of a plurality of the one or more ink strands (Itakura: [0108]).

As per claim 20, the applicant describes the method of claim 17, which is met by Houvener in view of Itakura in further view of Bancroft in further view of Rice, with the following limitation which is met by Itakura:

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Wherein the locating further comprises accessing an electronic signature authority to access the electronic signature database (Itakura: 7 of Fig 4).

As per claim 21, the applicant describes the method of claim 17, which is met by Houvener in view of Itakura in further view of Bancroft in further view of Rice, with the following limitation which is met by Houvener:

Wherein the substituting further comprises attaching the electronic signature to an electronic document that is an electronic version of a paper document to which the physical signature was affixed (Houvener: Col 8, lines 1-8).

Response to Arguments

Applicant's arguments filed 8/4/05 with respect to claim 1 have been fully considered but they are not persuasive. The applicant argues that the primary reference, Itakura, does not teach "encoding a public key in one or more ink strands". The examiner disagrees. Itakura discloses a method of authentication in which DNA-ID is placed on an authentication mark (13 of Fig 1A) as one or more ink strands. Within this DNA-ID, a public key is encoded. In an authentication process, the mark is read and the DNA-ID is decoded to reveal the public key. The examiner highlights the passage cited in the non-final action mailed 5/4/05:

"The DNA authentication mark 13 is read by the 2D bar scanner 33 using CCD 33a or the like, and the public key Y_A is obtained from the DNA authentication mark 13 at a public key analysis unit 51c of the client device 5. Then, the individual authentication is carried out at a matching unit 51a by matching the public key Y_A obtained from the DNA authentication mark 13 and the public key Y_A obtained from the CA and stored in a memory unit (DB) 51d" [0112].

As explicitly disclosed in the passage, the public key is obtained from the DNA authentication mark. The DNA authentication mark is decoded at a public key analysis unit in order to reveal the public key.

The examiner also notes the contradiction in the applicant's argument. At the bottom of page 2, the applicant notes the following: "As discussed in Itakura, para [0112], the mark (13) can be later decoded using an optical scanner to reveal the DNA-ID and ultimately a public key associated with that

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DNA-ID". Here, the applicant states that the DNA can be decoded to reveal the public key. Yet, in the next paragraph the applicant concludes the exact opposite: "a public key is not encoded in that DNA".

Applicant's arguments with respect to claim 11 have been fully considered but they are not
5 persuasive. The applicant argues that Houvener does not teach locating an electronic signature. The examiner disagrees. Houvener discloses that an electronic signature is attached to data and sent to a remote database site. The remote database site then verifies the attached electronic signature to authenticate the data. In order to verify a signature the remote database site must locate the signature. The examiner fails to see how a remote database site can verify an electronic signature without ever
10 locating it as alleged by the applicant.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

15 A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of
20 the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Schubert whose telephone number is (571) 272-4239. The examiner can normally be reached on M-F 7:30-6:00.

25 If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise can be reached on (571) 272-3868. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should
5 you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KS


EMMANUEL L. MOISE
SUPERVISORY PATENT EXAMINER

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